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SYB-M77-013
5 August 1977

MEMORANDUM FOR: OC Equipment Board Secretary

THROUGH : Acting Chief, Communications Engineering

25X1 FROM : [redacted]
FSUO Project Officer

SUBJECT : Field Station Unattended Operation (FSUO) Study [redacted] 25X1

25X1 1. [redacted] The OC Equipment Board was briefed on the FSUO concept at the June 1977 Board meeting. As a result of the discussion by the Board, a cost/benefits study of Field Station Unattended Operation was directed by the Chairman of the OC Equipment Board. The study has been completed and the results are presented in the attached paper.

25X1 2. [redacted] In addition to the cost/benefits study, Engineering and Operations were directed to perform further field testing of the FSUO, particularly in a
25X1 [redacted] In coordination with [redacted] has been selected as the site for further testing. The results of this test in CCC environment will assist in the determination of the applicability of the system and the selection of operational field installation sites.

25X1 3. [redacted] It is understood that the FSUO is on the agenda for discussion at the August Equipment Board meeting and it is requested that the attachment be distributed to members prior to the meeting.

[redacted] 25X1

Attachment:
As Stated

Distribution:
Original - Addressee w/att.
1 - OC-O/SOD w/att.

[redacted] 25X1

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Field Station Unattended Operation (FSUO) Cost/Benefit Analysis

1. Purpose.

The purpose of this paper is to specify the costs and benefits of implementing Field Station Unattended Operation. The cost for implementing FSUO is postured to include the initial equipment costs plus spares positioning, training, field installation and continued maintenance of the equipment. For those costs which could not be finitely determined, we have used what we consider conservative estimates in order to set outside limits to total costs. The estimates are included as part of the overall cost factor.

25X1 2. [redacted] Analysis assumptions based on 10 FSUO installations.

a. The equipment will be spared according to manufacturer recommendations and field support experience at the Depot.

b. Repairs will be handled in the R&R system.

c. The Model 650 tape drive and M-40 printer unit will be spared at each field station.

d. The tape transport will require refurbishment at four month intervals.

e. Major equipment failure (DS2201 boards and M-40 printer and printer boards) is estimated to occur at a rate of one per month at each station.

f. The average repair cost for each major equipment failure is $99.00.

g. The tape cartridges will require replacement at two month intervals.

h. Field installation of all units will be performed by a single technician requiring two TDY trips with five installations being performed each trip. The estimated installation time for each site is one week. The cost for installation of all units is $18,000.00 broken down into two TDY travel costs of $4,000.00 each and $1,000.00 for each week spent performing the installations. (Totalled, this is 2 x $4,000.00 + 10 x $1,000.00 += $18,000.00.)

25X1 3. [ ] FSUO Detailed Start-Up Costs.

Equipment Cost		
Bartlett 2201DS Recorder/Controller	$ 8,940.00	
Teletype M-40 Receive Only Printer	6,552.00	
KG-34 Safe	2,251.00	
Data Cartridge (40 @ $25.00 each distributed over the ten installations)	100.00	
	$17,843.00	$17,843.00
Sparing Costs		
Bartlett 2201DS Spares ($18,600.00 distributed over the ten installations)	$ 1,860.00	
Teletype M-40 Spares ($22,279.20 distributed over the ten installations)	2,227.92	
	$ 4,087.92	$ 4,087.92
Installation Costs ($18,000.00 distributed over the ten installations)		$ 1,800.00
Training Costs ($5,000.00 distributed over the ten installations)		500.00
Total Start-Up cost per Station		$24,230.92

25X1 4. [redacted] FSUO Support Costs.

Tape Drive Refurbishment (three times yearly @ $400.00 each)	$ 1,200.00
Tape Cartridge Replacement (six times yearly @ $25.00 each)	150.00
Board and Printer Repair (twelve times yearly for each station @ $99.00 each)	1,188.00
Per Annum Support Cost	$ 2,538.00

25X1 5. [redacted] Benefits.

The benefits which we have listed below are for the most part intangible. Thus far, we have only identified those factors having to do with expedient delivery of morning cast traffic and its reflection into network operations. It is felt, however, there are tangible opportunity benefits which can result from FSUO implementation in the immediate future. Admittedly, as the network expands in terms of bandwidth and more automated interactivity is invoked, the use of FSUO will be limited. Because such an expansion is not readily usable and will not be for some period, the FSUO appears cost effective not only for the short term but for an intermediate term in both the tangible and intangible areas of benefit. Those benefits which we have identified and which fall into the above framework are:

a. Message backlog at the connected switch which would normally be created during the cast period is eliminated.

b. The "daily" cast is on the desk of the action officers at the opening of business.

c. The early delivery of morning traffic would indicate that the peak evening period of outgoing traffic, which will normally be responses to a number of incoming messages received in the morning delivery, will be evened throughout the day.

d. As a result of c. above, there is a relaxing of some requirements for scheduling additional personnel at traditional peak hours.

e. The productivity of OC personnel is increased by compressing several hours of activity into minutes. (Picture if you will a 75BPS operation for cast operation where the operator takes one, two or three messages from the printer and logs and delivers them to the registry. Now visualize this operation over a period of four hours and consider the wasted effort and time due to the slow speed of message reception. On the other hand, with the FSUO the operator can run through half or all of the cast, tear the heading or logging information from the copies and deliver the traffic. In comparison, the

two or three repeated cycles of ripping, logging and delivery is a quantum improvement over 75BPS operation.)

f. With the FSUO improvement, stations which are borderlined on the need for an additional operator based on the size of cast, will be able to cope with the station workload without increased staffing.

25X1 6. [ ] Recommendations.

Based upon commentary from [ ] following the FSUO testing in [ ] a worldwide survey has been instituted to establish criteria for FSUO installation. The survey results, which provide average queue count, running times, and total messages for a workday, have just begun to arrive. With this information in hand and the results of the planned field testing, we will be able to determine the stations which will derive maximum benefit from the system.

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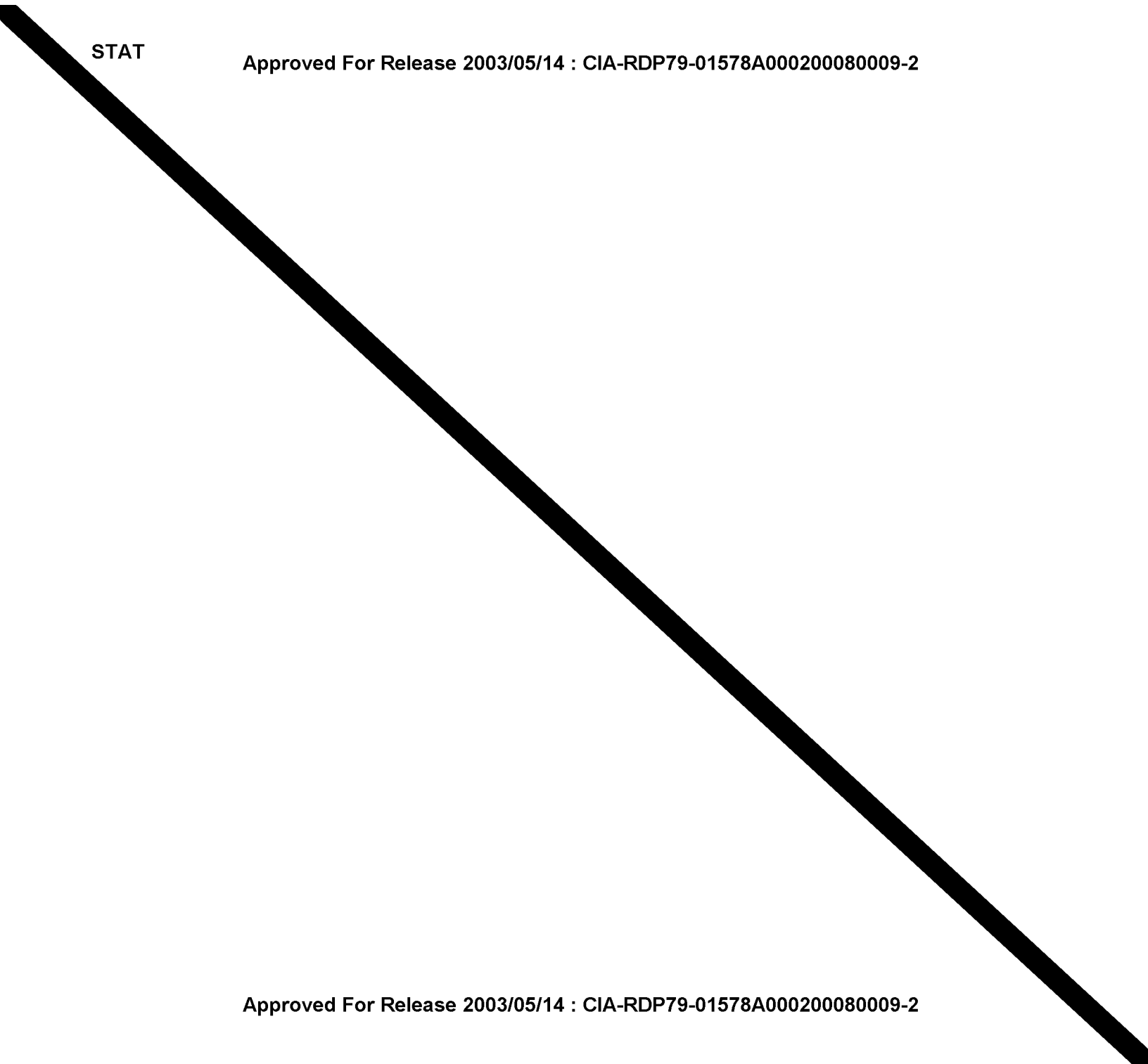

Approved For Release 2003/05/14 : CIA-RDP79-01578A000200080009-2